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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/765,712	01/19/2001	Randy K. Young	201009/131	2864
7590	01/29/2004		EXAMINER	
Gunnar G. Leinberg			NGUYEN, DUNG X	
NIXON PEABODY LLP			ART UNIT	PAPER NUMBER
Clinton Square			2631	
P.O. Box 31051				
Rochester, NY 14603			DATE MAILED: 01/29/2004	9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/765,712	YOUNG, RANDY K.
Examiner	Art Unit	
Dung X Nguyen	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 14 November 2003.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1 - 98 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 1 - 31, 42 - 60, and 69 - 98 is/are allowed.

6) Claim(s) 32, 38, 39 and 61 - 65 is/are rejected.

7) Claim(s) 33 - 37, 40, 41 and 66 - 68 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

 If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

 1. Certified copies of the priority documents have been received.

 2. Certified copies of the priority documents have been received in Application No. _____.

 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

 a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

Response to Arguments

1. Applicant's arguments filed on 14 November 2003 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 32 and 61 – 63 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Atwood (US patent # 4,065,718) submitted by applicant, and further in view of Kesler et al. in "Experiments in Joint Doppler and Elevation Estimation in the Near Field", IEEE International Conference on Acoustics, Speech, and Signal Processing, April 1987, vol. 12, pp. 1778 – 1781.

Regarding claim 32, Attwood shows (figures 1 & 2):

- Transmitting the doublet into the environment (figure 1);
- Receiving unit for receiving the doublet (figure 2);
- Signal 34 of figure 2 for extracting information from the doublet.

Attwood differs from the instant claimed invention that it does not show the step of forming a doublet based on time scales. However, Kesler et al. discloses (figure 2 and page 1779, column 2, lines 13 –23, and page 1778, the abstract on column 1 of Kesler et al.) the extracting information from the doublet based on time scales. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Atwood and Kesler et al. to provide the step of extracting information from the doublet based on time scales for

providing the autocorrelation of signals which have traveled a plurality paths from transmitter to receiver (abstract of Atwood).

Regarding claim 61, Attwood shows (figures 1 & 2):

- A receiving unit (figure 2) for receiving the doublet;
- Extracting information from the doublet.

Attwood differs from the instant claimed invention that it does not show the step of extracting information from the doublet based on time scales. However, Kesler et al. discloses (figure 2 and page 1779, column 2, lines 13 –23, and page 1778, the abstract on column 1 of Kesler et al.) the extracting information from the doublet based on time scales. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Atwood and Kesler et al. to provide the step of extracting information from the doublet based on time scales for providing the autocorrelation of signals which have traveled a plurality paths from transmitter to receiver (abstract of Atwood).

Regarding claims 62 and 63, respectively, based on the limitations analyzed in claim 61, Attwood further discloses (figure 2) that the receiver for receiving a doublet contained in composite signals 24, 26 and extracting information from the composite signal 34 based on time scales which was applied to the doublet. Attwood differs from the instant claimed invention that it does not show the plurality of doublets. However, Kesler et al. discloses (figure 2 and page 1779, column 2, lines 13 –23, and page 1778, the abstract on column 1 of Kesler et al.) the extracting information from the plurality of doublets based on time scales. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Atwood and Kesler et al. to provide the step of extracting information from the plurality of doublets (substantial in claim 61) based on time scales or based on one of a plurality of time delays which was applied to the doublet (substantial in claim 62) for providing the autocorrelation of signals which have traveled a plurality paths from transmitter to receiver (abstract of Atwood).

4. **Claims 38 and 64 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Atwood (US patent # 4,065,718) submitted by applicant, Kesler et al. in "Experiments in Joint Doppler and Elevation Estimation in the Near Field", IEEE International Conference on Acoustics, Speech, and Signal Processing, April 1987, vol. 12, pp. 1778 – 1781, and further in view of Ling (US patent # 5,329,547).

Regarding claim 38, Atwood and Kesler et al. differ from the instant claimed invention that they do not show wherein the information comprising a message embedded prior to the transmission of the doublet. However, Ling discloses the information comprising a message embedded prior to the transmission (column 1, lines 60 – 62). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Atwood, Kesler et al., and Ling to provide the step of wherein the information comprising a message embedded prior to the transmission of the doublet for facilitating coherent communication (abstract, lines 1 – 2 of Ling).

Regarding claim 64, the limitation is analyzed in the same manner set forth as claim 38.

5. **Claims 39 and 65 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Atwood (US patent # 4,065,718) submitted by applicant, Kesler et al. in "Experiments in Joint Doppler and Elevation Estimation in the Near Field", IEEE International Conference on Acoustics, Speech, and Signal Processing, April 1987, vol. 12, pp. 1778 – 1781, Ling (US patent # 5,329,547), and further in view of Schuster et al. (US patent # 6,681,252 B1).

Regarding claim 39, Atwood, Kesler et al., and Ling differ from the instant claimed invention that they do not show wherein the information comprising imaging data embedded prior to the transmission of the doublet. However, Schuster et al. discloses the information comprising imaging data embedded prior to the transmission (column 19, lines 64 – 68, and column 11, lines 20 – 22). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Atwood, Kesler et al., Ling, and Schuster et al. to provide the step of wherein the information comprising imaging data embedded prior to the

transmission of the doublet for facilitating coherent communication (abstract, lines 1 – 2 of Ling).

Allowable Subject Matter

4. **Claims 33 – 37, 40, 41, and 66 - 68 are objected** to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. **Claims 1 – 31, 42 – 60, and 69 – 98 are allowed.** The following is a statement of reasons for the indication of allowable subject matter:

Regarding to the claimed invention, the prior art of record fails to show or render obvious of a communication system for active sensing and navigation. The modulation time-delays and time-scales compress an arbitrary, noise-like “base signal”, then it sums this time-scaled and time-delayed with the original base signal to form a doublet. The doublet forming process can be repeated and multiple doublets can be summed together and simultaneously transmitted. The demodulator uses the applied time-scale and time-delay to extract information from the doublet.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung X. Nguyen whose telephone number is (703) 305-4892. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Ghayour Mohammad H. can be reached on (703) 306-3034. The fax phone numbers for this group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.

DXN
December 5, 2003

M. Gh-
MOHAMMAD H. GHAYOUR
PRIMARY EXAMINER